GARO Wallbox GLB

Assembly instructions / End User Instruction (EN)

GARO®

TABLE OF CONTENT

About this manual

The purpose of this Manual is to provide you with the necessary information to install and use your Garo Wallbox, model GLB

This document contains general descriptions which are verified to be accurate at the time of printing. However, because continuous improvement is a goal at GARO, we reserve the right to make product modifications at any time.

This range is subject to continual product development. Errors, typo and omissions excepted.
Latest manual can always be found at www.garoemobility.com/support

Safety Information

Hazard categories and special symbols
Read these instructions carefully before trying to install, operate, or maintain the GLB Wallbox.

⚠	Indicates a potentially hazardous situation which could result in death or serious injury
⚠	Indicates a potentially hazardous situation which could result in minor or moderate injury
ⓘ	Indicates practices that do not involve the risk of bodily injury

Warnings

⚠ This equipment should not be used by anyone (including children) with reduced physical, sensory or mental capacity, or anyone lacking in experience or knowledge, unless they are provided with supervision or prior instruction in how to use the equipment by the person responsible for their safety.

⚠ The GLB Wallbox range of charging stations is designed exclusively for charging electric vehicles.

⚠ The GLB Wallbox must be grounded through a permanent wiring system.

⚠️ Do not install or use the GLB Wallbox near flammable, explosive, harsh, or combustible materials, chemicals, or vapors.

⚠️ Turn off input power at the circuit breaker before installing, configuring or cleaning of the GLB Wallbox.

⚠️ Use the GLB Wallbox only within the specified operating parameters.

⚠️ Never spray water or any other liquid directly at the GLB Wallbox. Never spray any liquid onto the charge handle or submerge the charge handle in liquid. Store the charge handle in the dock to prevent unnecessary exposure to contamination or moisture.

⚠️ Do not use this equipment if it appears to be damaged or if the charging cable appears to be damaged.

⚠️ Do not modify the equipment installation or any part of the product.

⚠️ Do not touch the GLB Wallbox's terminals with fingers or any other objects.

⚠️ Do not insert foreign objects into any part of the GLB Wallbox

Cautions

⚠️ Do not use private power generators as a power source for charging.

⚠️ Incorrect installation and testing of the GLB Wallbox could potentially damage either the vehicle's Battery and/or the GLB Wallbox itself.

⚠️ Do not operate the GLB Wallbox in temperatures outside its operating range – see technical data.

Notes

ⓘ All installation must be carried out by an authorized installer and comply with local installation regulations.

ⓘ Ensure that the GLB Wallbox's charging cable is positioned so it will not be stepped on, driven over, tripped on, or subjected to damage or stress.

(i)   Unroll the charging cable to prevent it from overheating.

(i)   Do not use cleaning solvents to clean any of the GLB Wallbox's components. The outside of the GLB Wallbox, the charging cable, and the end of the charging cable should be periodically wiped with a clean, dry cloth to remove accumulation of dirt and dust.

(i)   Be careful not to damage the circuit boards or components during installation.

(i)   Refer to local standards and regulations not to exceed charging current limitations.

(i)   Adapters for charging connectors are not allowed to be used.

(i)   Cord extension sets for charging cable are not allowed to be used.

(i)   To even out the load, it is important to rotate the phases when connecting several of GLB wallboxes to the same supply. Note that 1-phase charging is common in electric vehicles and L1 the GLB is used for this purpose.

(i)   Ventilation signal from EV is not supported.

(i)   Cord extension sets for charging cable is not allowed to be used.

(i)   To even out the load, it is important to rotate the phases when connecting several of GLB wallboxes to the same supply. Note that 1-phase charging is common in electric vehicles and L1 the GLB is used for this purpose.

(i)   Ventilation signal from EV is not supported.

(i)   Cord extension sets for charging cable is not allowed to be used.

(i)   Electrical vehicles (EV) software and the GLB Wallbox firmware are continuously updated. To make sure that the GLB wallboxis working properly, it is necessary to update the firmware and it requires a communication card.
Communication cards are available as an accessory.
GLB Wallboxes installed in a cluster only need the
master to have the communication card installed.
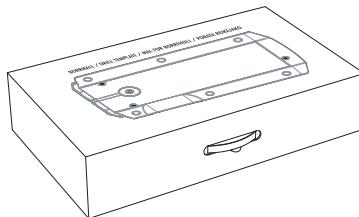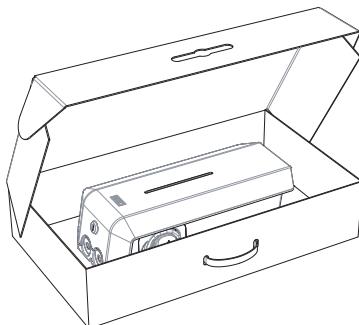
GARO®

INSTALLATION INSTRUCTIONS

Mandatory: Supply cable, 1-phase or 3-phase depending on GLB model
Cable entrance from bottom side

Custom (only when extra functions in use):

• Twisted pair cable for Modbus energy meter
• Twisted pair cable for Datalink communication
• 2-wire signal cable for remote control function
• TP Cat6 for LAN connection

Box Contents

Drill template
(see the back of the box)

GLB Wallbox

Keys

Manual

Language labels

Tools and Materials Required

Before installing the Garo GLB-Wallbox, gather the following tools and materials:

- Pen or marker
- Hole punch (optional, to push through cardboard template)
- Wire cutter
- Voltmeter or digital multimeter (to measure AC voltage at the installation site)
- Small flathead screwdriver
- Medium flathead screwdriver
- Large flathead screwdriver (optional, to remove plastic knock-outs on backside of GLB Wallbox)
- T20 Torx driver
- 3 screws (and plugs) suitable for wall type
- Ferrules (the diameter of the ferrule depends on the diameter of the power wiring and the construction)
- Level
- Power drill
- Twisted pair cable (Optional only when DLM is used) Cable: Suitable for Modbus communication.
- Cable gland for communication cable (Optional only when knock-outs on backside of GLB Wallbox is used)

Important Information

The GARO GLB Wallbox is an AC charge-station enabling Mode 3 charging which complies fully with the requirements of IEC 61851-1 and IEC TS 61439-7. The product complies with IP Code IP44, with a closed front.

It is to be fitted to a wall or GARO Wallbox stand, and all installation must be carried out by an authorized installer and comply with local country installation regulations.

GLB Type

GARO **353116** ☒ C E
GLB-T222WO
230/400V 32A 50Hz
IP44 EN 61851-1 IEC61439-7 AEVCS
SN: 5022254
BOX 203, 335 25 GNOSJÖ, SWE

2017-12-01

(figure 1)

Type Label example

GLB Laddstation tabell

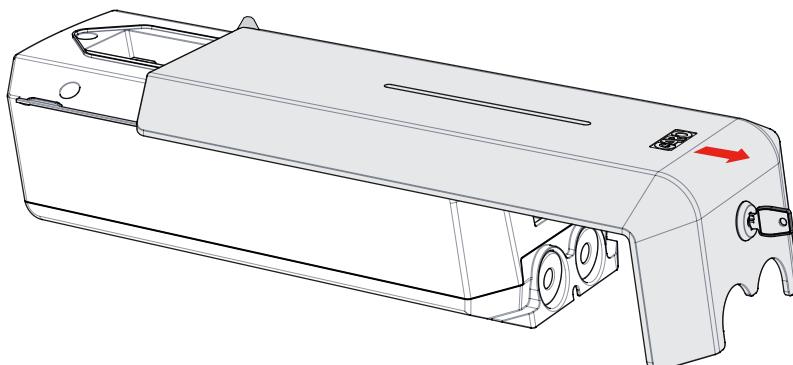| GLB Type	Protection type						
	1-phase	3-phase	No RCBO or RCCB	RCBO	RCCB type A	RCCB type B	DC-fault protection
GLB..-..37.. [2) 4)]	●			●			
GLB..-..74.. [2) 4)]	●			●			
GLB..-..22.. [1) 2)]		●	●				
GLB..-..22..-A [2) 3)]		●			●		
GLB..-..22..-B [3)]		●				●	
GLBDC..-..37.. [4)]	●			●			●
GLBDC..-..74.. [4)]	●			●			●
GLBDC..-..11.. [1)]		●	●				●
GLBDC..-..22.. [1)]		●	●				●
GLBDC..-..22..-A [3)]		●			●		●

(figure 2)

[1]   Chargers without RCCB or RCBO included in the enclosure must have Residual Current protection and must be protected with a max 32A fuse in the supply distribution box.

[2]   Chargers without RCCB Type B fitted or DC fault protection in the enclosure must in accordance to IEC 60364-7-722 be protected with a Residual Current Device (RCD) Type B.

[3]   3-phase chargers equipped with a Residual Current Circuit Breaker (RCCB) must be protected with a max 32A fuse in the supply distribution box.

[4]   1-phase chargers fitted with a Residual Current Breaker with Overcurrent Protection (RCBO) can be connected in parallel. This group of chargers must be protected by a backup fuse in the distribution box. The backup fuse shall not exceed 125A.

- Calculate to determine the maximum operating current. Use conductors that are sized in accordance with local wiring regulations. The selected cable must be able to sustain periods of constant load of up to 32A. Manufacturers recommendation is to use minimum 6mm² conductors.
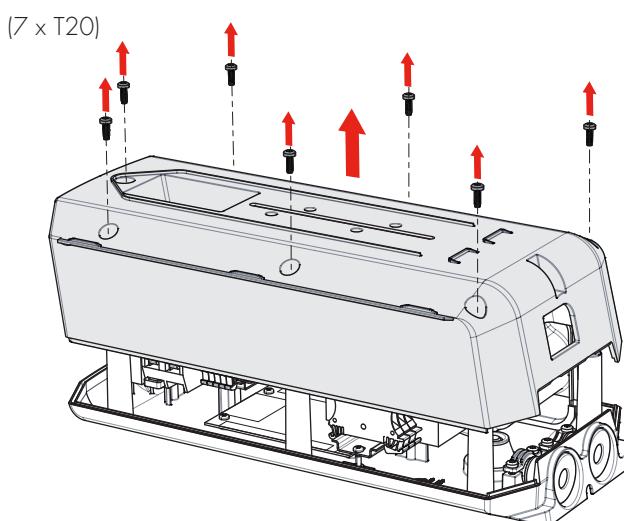- Calculate the distance to ensure minimal voltage drop.

Step-by-Step Guide

1. Read Safety information. The installation must be carried out by an authorized installer.

2. Select the appropriate group fuse (1x16A - 3x32A) and cable area for the electrical installation. Some countries require earth fault breakers to be installed. Follow local country regulations and select the appropriate earth fault equipment for the electrical installation. NOTE! Due to high currents for a long time in the cable, there is a high risk of voltage drop if the cable is under-dimensioned which can damage the electronics in an EV.

3. Fill in the fuse and cable information in the Warranty form located in the installation manual that is included in the box.

4. Mount the GLB Wallbox according to the installation sketches. There is a drill template at the back side of the box.
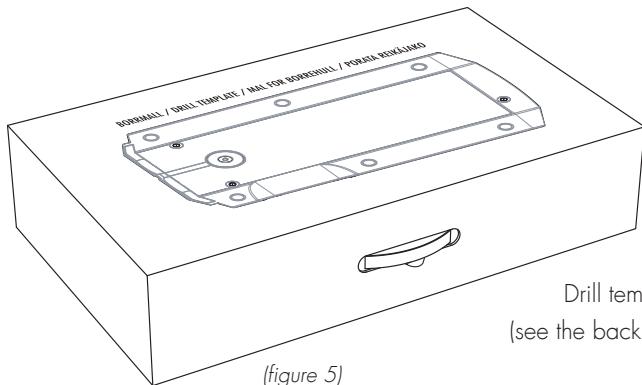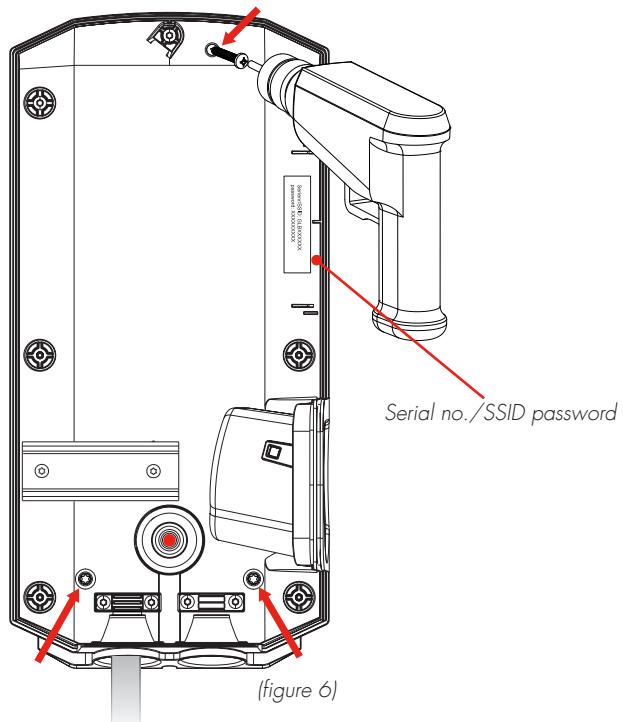

(figure 3)

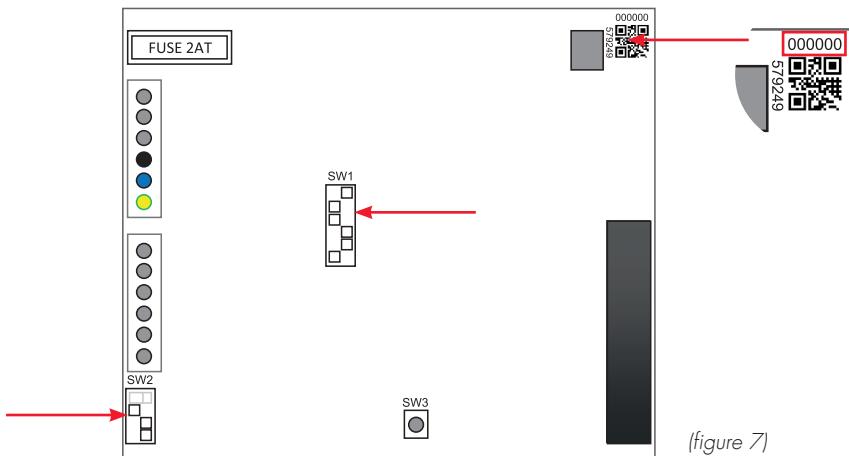(7 x T20)

(figure 4)

Installation Instructions

Drill template,
(see the back of the box)

(figure 5)

Serial no./SSID password

(figure 6)

5.   Set dip switch SW1 to same ampere (A) as the main fuse (available range is 16A - 63A). SW1 is located at the center left hand side of the main board. See photo 7.

6.   Set the dip switch SW2 according to your group fuse for the GLB Wallbox (6A - 32A). Dip switch 2 is located at bottom left corner of the main board. See photo 7.

(figure 7)

SW1

ON OFF

3	☐	☑	3=OFF
2	☐	☑	2=OFF
1	☑	☐	1=ON

16A

3	☐	☑	3=OFF
2	☑	☐	2=ON
1	☐	☑	1=OFF

20A

3	☐	☑	3=OFF
2	☑	☐	2=ON
1	☑	☐	1=ON

25A

3	☑	☐	3=ON
2	☐	☑	2=OFF
1	☐	☑	1=OFF

32A

3	☑	☐	3=ON
2	☐	☑	2=OFF
1	☑	☐	1=ON

40A

3	☑	☐	3=ON
2	☑	☐	2=ON
1	☐	☑	1=OFF

50A

3	☑	☐	3=ON
2	☑	☐	2=ON
1	☑	☐	1=ON

63A

SW2

ON OFF

3	☐	☑	3=OFF
2	☐	☑	2=OFF
1	☑	☐	1=ON

6A

3	☐	☑	3=OFF
2	☑	☐	2=ON
1	☐	☑	1=OFF

10A

3	☐	☑	3=OFF
2	☑	☐	2=ON
1	☑	☐	1=ON

13A

3	☑	☐	3=ON
2	☐	☑	2=OFF
1	☐	☑	1=OFF

16A

3	☑	☐	3=ON
2	☐	☑	2=OFF
1	☑	☐	1=ON

20A

3	☑	☐	3=ON
2	☑	☐	2=ON
1	☐	☑	1=OFF

25A

3	☑	☐	3=ON
2	☑	☐	2=ON
1	☑	☐	1=ON

32A

Depending on the size of the fuse, overload may occur, primarily at the property's meter fuse. The wallbox's charging current can be reduced using the switches on the mainboard (refer to Mainboard simplified connection diagram (figure 9).

The power supply must be turned off before setting of the DIP switches

(figure 8)
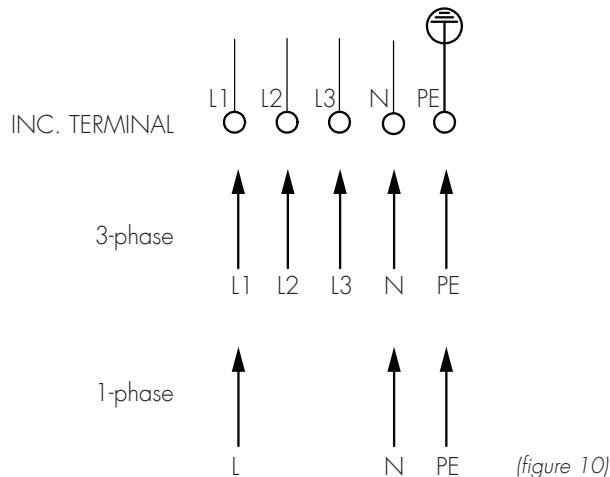
Dip Switch settings table

Main fuse	16A	20A	25A	32A	40A	50A	63A
SW1(DIP 1-3)	16A	20A	25A	32A	40A	50A	63A
SW2(DIP 1-3)	MAX13A	MAX16A	MAX20A	MAX25A	MAX32A	MAX32A	MAX32A

(figure 9)

7. Install the electrical power supply cable according to your local country regulations. Make sure that the cable is not electrified before start this step.

(figure 10)
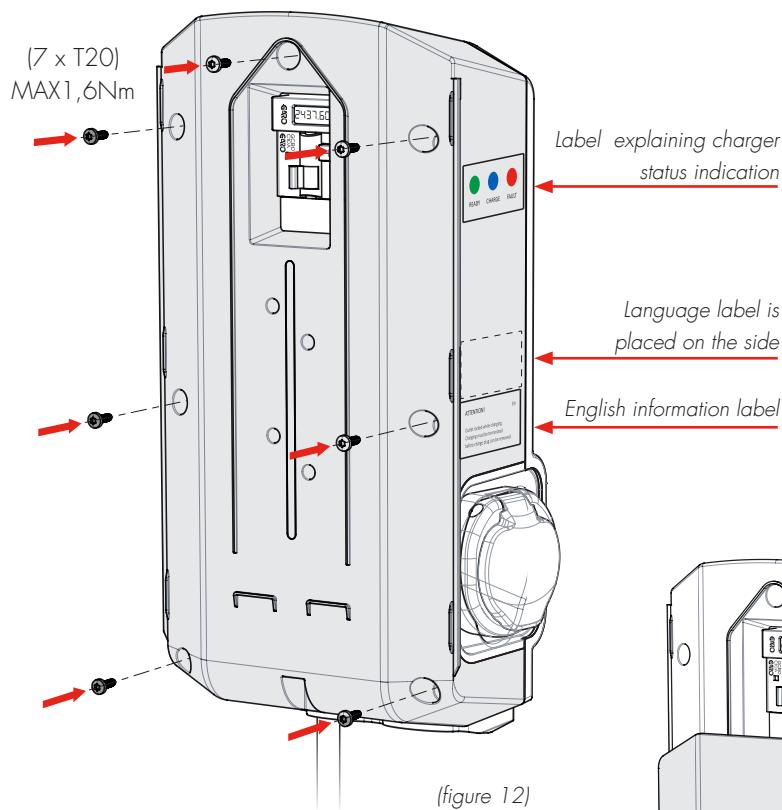
8. Fill in the serial number of the main board in the Warranty form. See QR code label at upper right corner of the main board.

(figure 11)
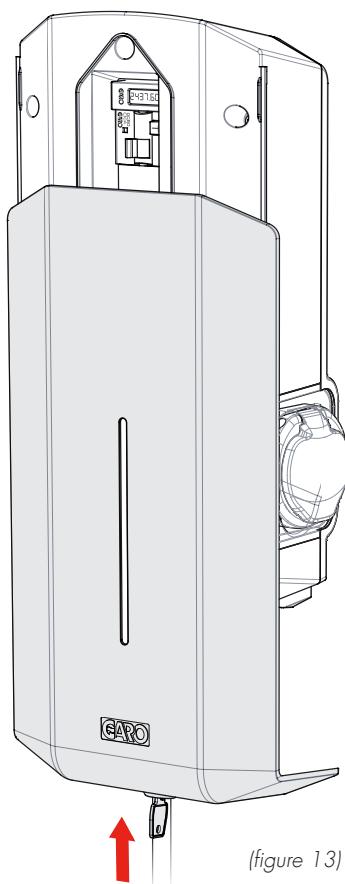
9. Mount the box cover on the enclosure + front lid, see photo 12-13.

(7 x T20)
MAX1,6Nm

Label explaining charger status indication

Language label is placed on the side

English information label

(figure 12)
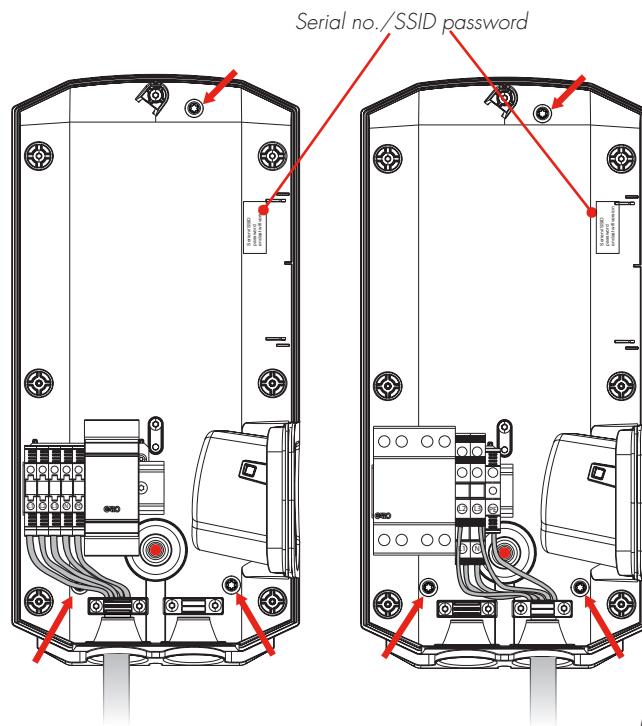
10. Turn on the electrical power to the GLB Wallbox.

(figure 13)

11. For GLBW… and GLBDCW… models: Connect a mobile device (PC/Tablet/Mobile) to the GLB Wallbox Wifi network. You find SSID and password on the rating label. Type in 172.24.1.1 in your web browser and check that the GLB webinterface is visible. This action confirms that the GLB Wallbox communication module is working properly.

Serial no./SSID password

(figure 14)

12. Test the charger with a test instrument or test to charge an electric vehicle to ensure that the charger is working properly.

13. Doublecheck that the Warranty Form is filled in completely, sign with name, date and company that the warranty is valid.

Remote Control function

The wallbox is equipped with a potential-free contact input, where charging can be activated and deactivated. The charger's remote control capability allows charging to be controlled externally through, for example, a relay outlet such as a timer or other superordinate control unit.

FUSE 2AT

SW1

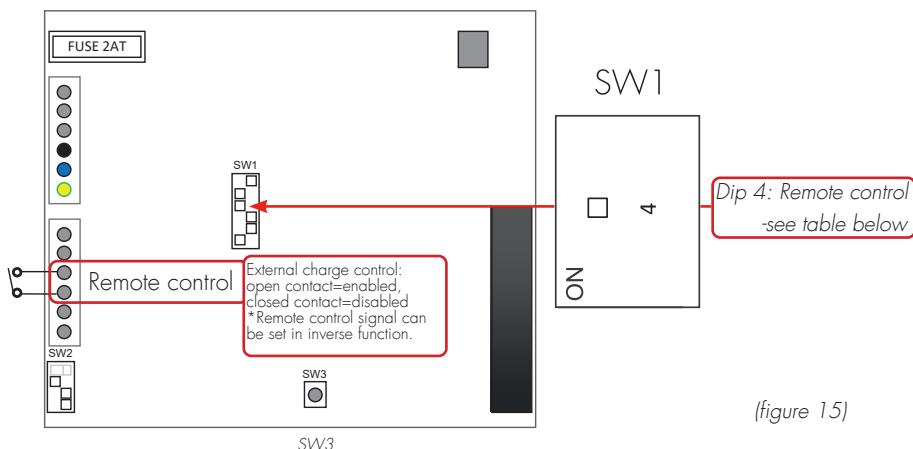Dip 4: Remote control -see table below

SW1

ON

Remote control

External charge control:
open contact=enabled,
closed contact=disabled
*Remote control signal can
be set in inverse function.

SW2

SW3

SW3

(figure 15)

DIP Switch settings

Charging is activated at	SW1 (DIP 4)
Open circuit	ON (Factory setting)
Closed circuit	OFF

Charging can be verified in two ways:

- Activate charging by opening the circuit between the Remote Control connection blocks. This option is the factory setting.
- Activate charging by closing the circuit between the Remote Control connection blocks.

Dynamic Load Management (DLM) for Stand-Alone GLB-Wallbox

DLM reduces charging current when demand of current elsewhere increases. Simple to say, the GLB Wallbox balance the charging current that you will get as much power as possible to the EV that is available in the system without any risk to overload the mains fuses.

The following energy meters are approved:
- GNM1D-RS485
- GNM3D-RS485
- GNM3T-RS485 (current transformer 3-phase. Max current is based installed current transformer)
- CG EM 112
- CG EM 270
- CG EM 271

For use in systems with local electricity produktion (solar-, wind etc)
- GNM3D-LP RS485
- GNM3T-LP RS485N (current transformer 3-phase. Max current is based installed current transformer)

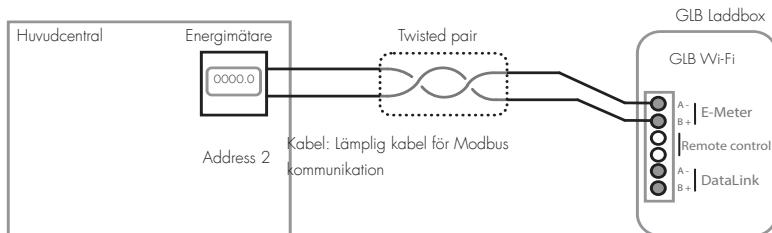Note the energy meter's Modbus address must be set to 2, 100 or 101.

Adress 2: Recommended for a stand alone GLB Wallbox. Setting for SW1 CC2 is valid and charging process are paused if available current drops below 6A.
Adress 100 or 101: Only recommended when multiple GLB Wallbox are connected in a grid. Minimum charging current is 6A and charging process is not terminated by the DLM function. This mode require an installed wifi module.

The energy meter continually measures the total energy consumption for each phase. The data is transmitted to the GLB Wallbox, that then is reducing the charging current when necessary in order to prevent the mains fuses from tripping.
In one-phase systems, the energy meter needs to be installed to same phase as the GLB Wallbox.

Example of installation *(figure 16)*

Commissioning:

Connect central energy meter to GLB Modbus terminal "E-Meter" (refer to Mainboard simplified connection diagram) Note, Modbus connection between energy meter and GLB must be connected as following: A- (energy meter) to A- (GLB "E-meter" terminal) and B+ (energy meter) to B+ (GLB "E-meter" terminal)

• Config energy meter in distrubution box to Modbus address no.2 (9600 baud, no parity, one stop bit)
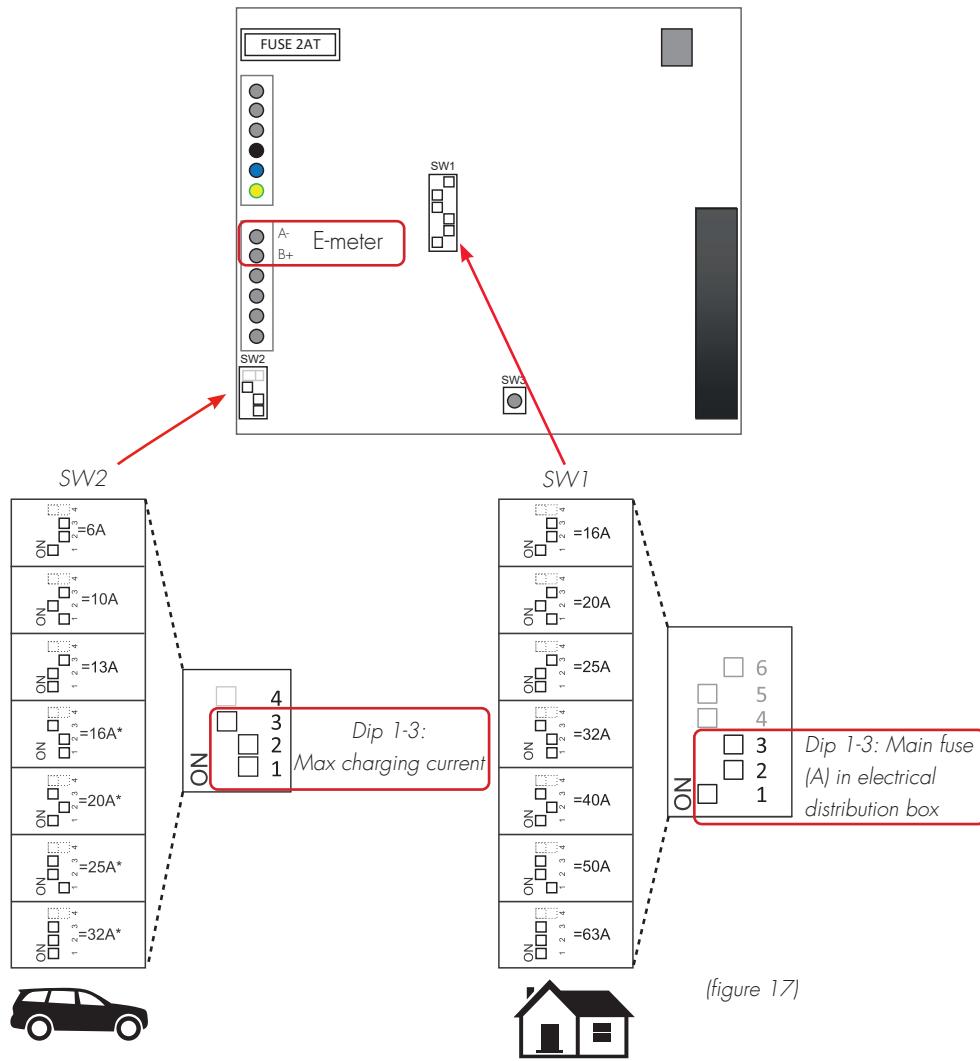• Config SW1 (DIP 1-3) for max current (refer Setting the amperage for main fuses)

During installation of DLM, the amperage setting of the SW1 (DIP1-3) must be adjusted to correspond with the size and strength of the main fuses.

The SW2 (DIP 1-3) which controls the charger's maximum permitted charging current should be set to the recommended current values outlined below, when DLM for individual chargers is activated.

Main fuse	16A	20A	25A	32A	40A	50A	63A
SW1(DIP 1-3)	16A	20A	25A	32A	40A	50A	63A
SW2(DIP 1-3)	13A	16A	20A	25A	32A	32A	32A

NOTE! If the wallbox has an internal energy meter installed, the Modbus connection of the external meter is to be connected in parallel with the internal energy meter (terminals "E-meter" on the main board).

FUSE 2AT

SW1

A-
B+
E-meter

SW2

SW3

SW2

=6A
ON

=10A
ON

=13A
ON

=16A*
ON

=20A*
ON

=25A*
ON

=32A*
ON

SW1

=16A
ON

=20A
ON

=25A
ON

=32A
ON

=40A
ON

=50A
ON

=63A
ON

4
3
2
1
ON

*Dip 1-3:
Max charging current*

6
5
4
3
2
1
ON

*Dip 1-3: Main fuse
(A) in electrical
distribution box*

(figure 17)

Dynamic Load Management (DLM) for GLB-Wallboxes in group

To activate DLM for a group of GLB-Wallboxes, a GARO Modbus energy meter must be installed in the supply distribution box.
It is also possible to install a 2nd Modbus energy meter when you need to measure the consumed energy at more than one place.

 The following energy meters are approved:

- GNM1D-RS485
- GNM3D-RS485
- GNM3T-RS485 (current transformer 3-phase. Max current is based installed current transformer)
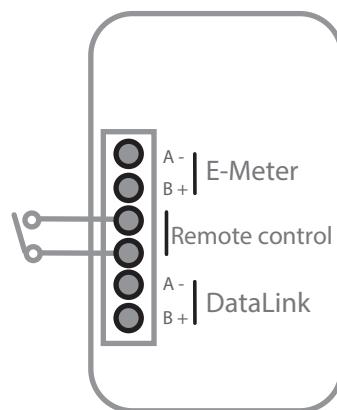- CG EM 112
- CG EM 270
- CG EM 271

For use in systems with local electricity produktion (solar-, wind etc)
- GNM3D-LP RS485
- GNM3T-LP RS485N (current transformer 3-phase. Max current is based installed current transformer)

Note the energy meter's Modbus address must be set to 100 and (101 for the 2nd energy meter). The energy meter continually measures the total energy consumption for each phase. Data is transmitted to the first wallbox (GLB Master), which controls the charging current per phase for the entire system in order to prevent the main fuses from tripping. When using a single-phase energy meter, the meter must be set to the same phase as all of the wallboxes.
A maximum of 32 GLB-Wallboxes may be connected by a shielded twisted pair cable, which is connected to the GLB-Wallbox connection terminal labelled 'Data Link'.
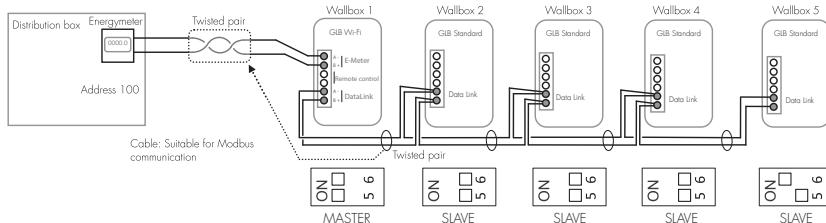

(figure 18)

The Data Link cable must be electrically terminated in the first and final wallboxes, via switch SW1 (DIP 6) on the printed circuit board. In the below example, the switch SW1 (DIP 6) is to be set to 'ON' in wallboxes no. 1 and 5, and 'OFF' in the remaining boxes. To verify that the master wallbox is defined as master, ensure the switch SW1 (DIP 5) is set to 'ON' mode.
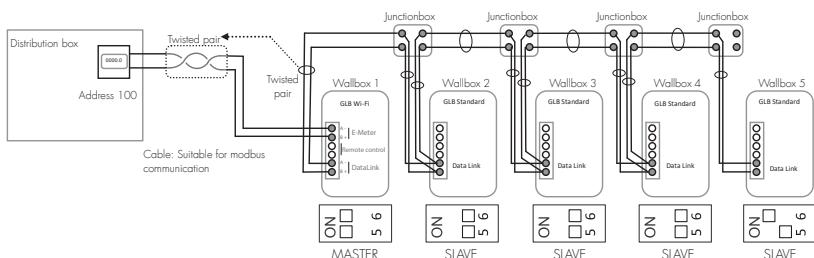
SW1 (DIP 5 and 6) settings

(figure 19)

Example of installation – Data Link, direct connection between wallboxes

(figure 20)

Example of installation – Data Link, permitted connection via external junction boxes

(figure 21)

Commissioning:

- Connect central energy meter to GLB Modbus terminal "E-Meter" (refer to Mainboard simplified connection diagram) Note, Modbus connection between energy meter and GLB must be connected as following: A- (energy meter) to A- (GLB "E-meter" terminal) and B+ (energy meter) to B+ (GLB "E-meter" terminal)
- Connect Data Link to GLB Modbus terminal "Data Link" (refer to Mainboard simplified connection diagram) Note, Modbus connection between GLB Wallboxes must be connected as following: A- to A- and B+ to B+ see (figure 18) (figure 19).
- Config SW1 (DIP 5-6) see (figure 17) (figure 18) (figure 19).
- Config energy meter in distribution box to Modbus address no.100 (9600 baud, no parity, one stop bit).
- Config max current or max power (refer Dynamic Load Management (DLM) setting inthe web interface).

It should be noted that SW1 (DIP 1–3) does not have a function for group load balancing. Instead, group balancing is performed in the GLB Master's web interface (see section entitled Load balancing settings in the web interface).

When connections lost eg. master loose connection from energy meter or
master stops working, the slaves reduces the charging current to 6A. This state is indicated by a short sound signal and a short yellow led signal every 60
seconds.

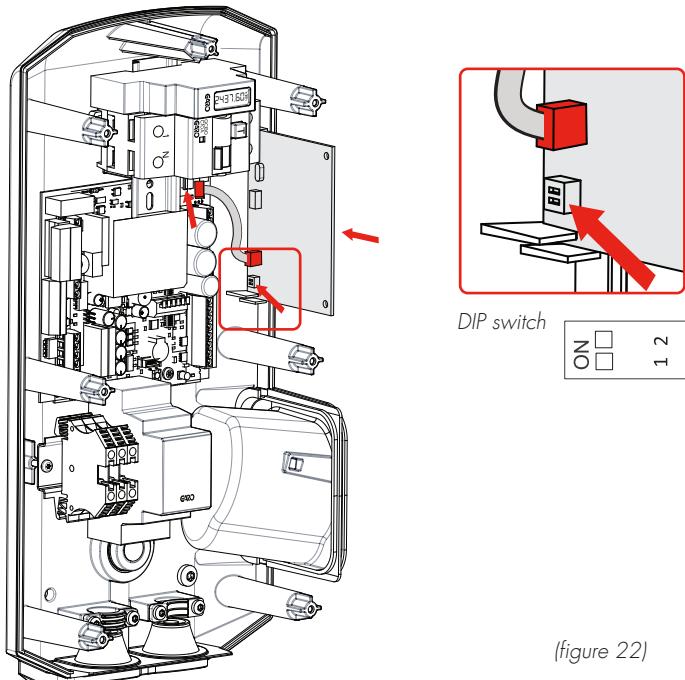## Dynamic Load Management (DLM) settings in the web interface

All load balancing settings in groups are carried out via the wallbox's web interface.
To connect a mobile phone, tablet or computer to the wallbox, see the section entitled Connecting to the wallbox´s Wi-Fi access point (AP).
The DLM meter connected – Group configuration' option can be found under Settings.
The Fuse rating contract can be set (A), as can the value of the power rating contract (kW), where relevant.
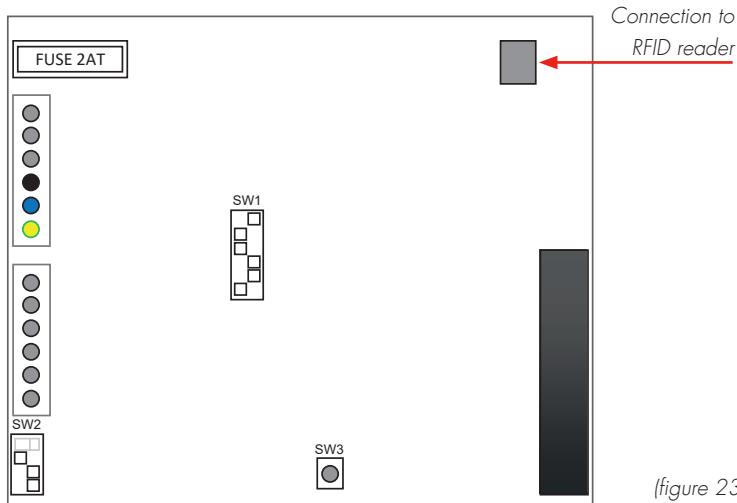
Installing the RFID reader

Turn off the power to the GLB-Wallbox
Install the RFID reader as shown in the image above. DIP switches on the RFID card should be set to ON mode.

DIP switch

ON 1 2

(figure 22)

GLB mainboard

Connection to RFID reader

FUSE 2AT

SW1

SW2

SW3

(figure 23)

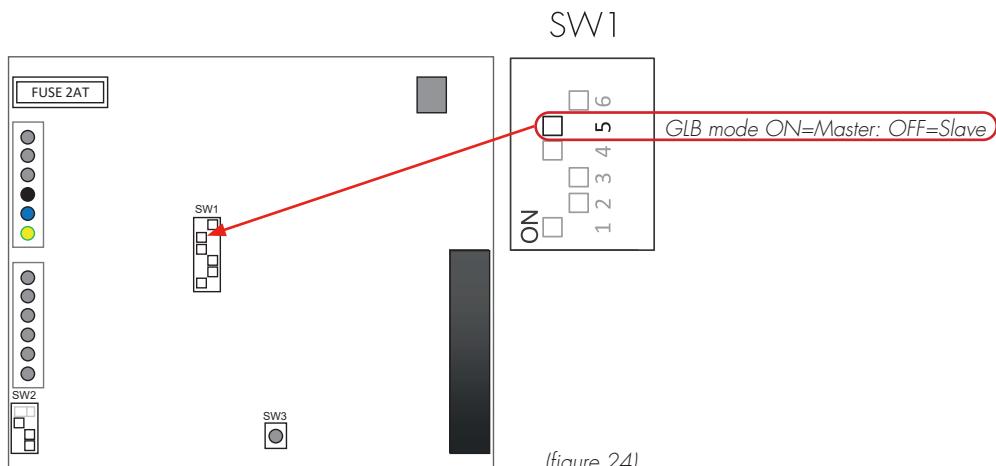## DIP Switch settings for RFID reader on individual GLB Wallbox

To activate RFID reader on a GLB Wallbox that is stand-alone (not connected with other GLB Wallboxes), it is important to set the GLB-Wallbox as master (set switch SW1 (DIP 5) to 'ON).

To verify that the master wallbox is defined as master, ensure the switch SW1 (DIP 5) is set to 'ON'.

Note: It is only possible to have one Master GLB in a system when connecting GLB Wallboxes with the datalink bus.

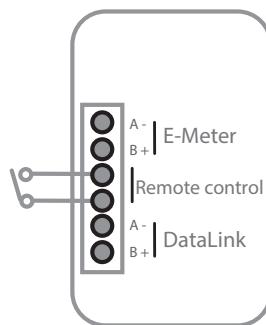*GLB mode ON=Master: OFF=Slave*

(figure 24)

If several GLB-Wallboxes are connected in group, all GLB slaves must be connected to the data link bus and be energized before the RFID function is activated. GLB slaves that are not plugged in or powered will not receive RFID command and remain open for charging and the RFID function is disabled.

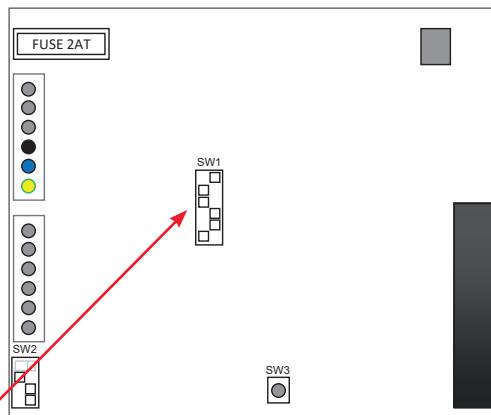## RFID settings, see section Web interface in this manual.

RFID for multiple GLB-Wallboxes in group

A maximum of 32 GLB-wallboxes may be connected together by a shielded twisted pair cable, which is connected to the terminal labelled 'Data Link'.
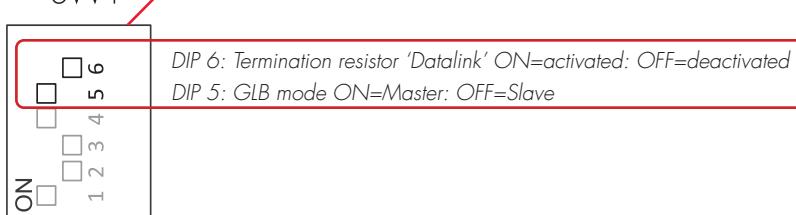
(figure 25)

The Data Link cable must be electrically terminated in the first and last wallboxes, via switch SW1 (DIP 6) on the main board. In the below example, the switch SW1 (DIP 6) is to be set to 'ON' in wallboxes no. 1 and 5, and 'OFF' in the remaining boxes. To verify that the master wallbox is defined as master, ensure the switch SW1 (DIP 5) is set to 'ON' mode.

(figure 26)

SW1

DIP 6: Termination resistor 'Datalink' ON=activated: OFF=deactivated
DIP 5: GLB mode ON=Master: OFF=Slave

There must always be one (1pcs) GLB wallbox as "Master" in the installation and it is set by SW1 DIP5. All other boxes should be slaves and this is set by SW1 DIP6, see picture 27.
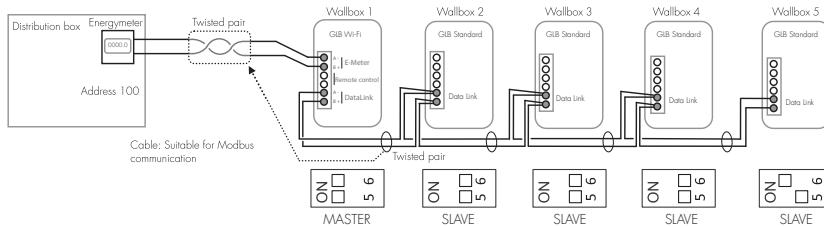
SW1 (DIP 5 and 6) settings

MASTER	SLAVE	SLAVE with end termination

(figure 27)
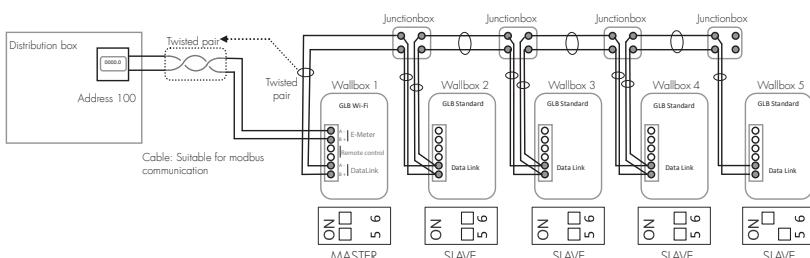
Installationen ska utföras enligt bild 28 eller bild 29.

Example of installation – Data Link, direct connection between wallboxes

(figure 28)

Example of installation – Data Link, permitted connection via external junction boxes

(figure 29)

Commissioning:

- Connect Data Link to GLB Modbus terminal "Data Link" (refer to Mainboard simplified connection diagram) Note, Modbus connection between GLB Wallboxes must be connected as following: A- to A- and B+ to B+ see (figure 27) (figure 28).
- Config SW1 (DIP 5-6) see (figure 27) (figure 28).
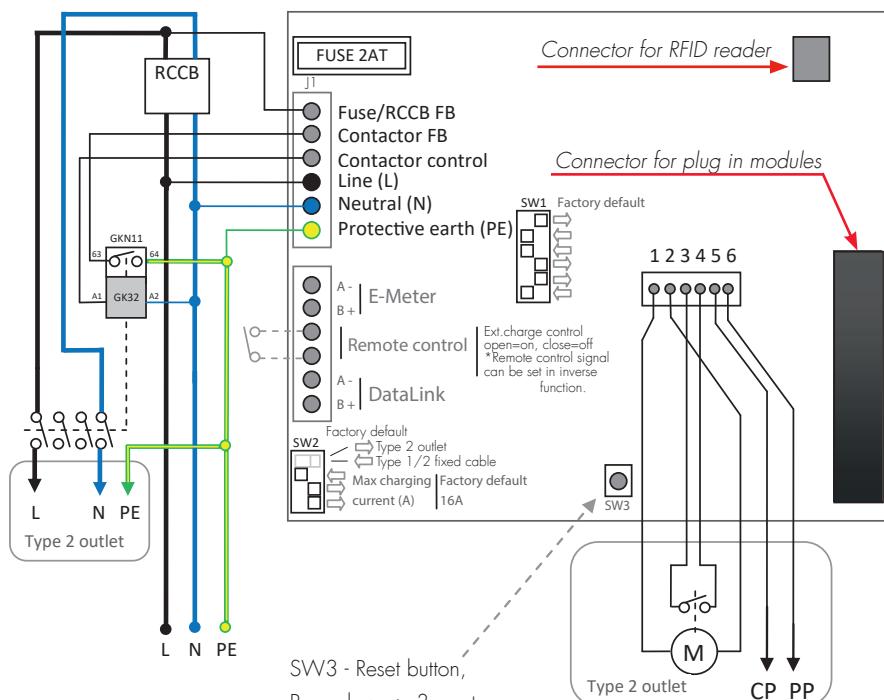
LAN connection via RJ45 port on communication card (only for GLB-Wallbox with communication card installed)

If you want to use LAN-cable to access the GLB-Wallbox web-interface, you can install a LAN cable to the RJ45 port on the communication card.

The GLB-Wallbox RJ45 port settings is DHCP as default.

RFID settings, see section web interface in this manual

Mainboard simplified connection diagram

FUSE 2AT

RCCB

Connector for RFID reader

J1

Fuse/RCCB FB
Contactor FB
Contactor control
Line (L)
Neutral (N)
Protective earth (PE)

Connector for plug in modules

SW1 Factory default

GKN11
63 64
A1 GK32 A2

1 2 3 4 5 6

A -
B + E-Meter

Remote control

Ext.charge control
open=on, close=off
*Remote control signal
can be set in inverse
function.

A -
B + DataLink

Factory default
Type 2 outlet
Type 1/2 fixed cable
Max charging Factory default
current (A) 16A

SW2

SW3

L N PE

Type 2 outlet

M

Type 2 outlet CP PP

L N PE

SW3 - Reset button,
Press down > 3 sec to
reset WiFi back to default
Access Point mode.
See label behind sliding
front cover for SSID name
and password.

(figure 30)

1. blue/brown
2. blue/red
3. blue/yellow
4. blue/green
5. white
6. red

Dimensional drawing

205

422

124

(figure 31)

END USER INSTRUCTION

Congratulations on selecting a GARO GLB-Wallbox and contributing to a better environment. The GARO GLB Wallbox is an AC charge-station enabling Mode 3 charging which complies fully with the requirements of IEC 61851-1 and IEC TS 61439-7. The product complies with IP Code IP44, with a closed front.

It is to be fitted to a wall or GARO Wallbox stand, and all installation must be carried out by an authorized installer and comply with local country installation regulations.

NOTE! Read all safety information before you start to use the GLB Wallbox

Charging electric vehicles

1. Connect the GLB-Wallbox to the vehicle using the cable.
2. When charging starts, shifting blue light intensity indicates charging in progress.
3. Stop charging. As a rule, the GLB-Wallbox socket and vehicle inlet locks the cable. As a result, charging must be stopped from the vehicle before the cable is removed. Terminate charging according to the vehicles instruction manual, removing connector from car before removing connector at charger end.
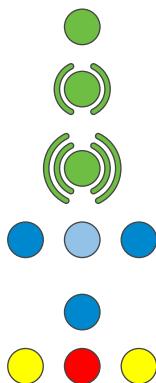4. After terminated charging, make sure cable is suspended.

Important information:
• It is your EV that decide how much energy the Wallbox deliver to the EV.
• The GLB Wallbox can deliver max the kW according to the GLB-Wallbox rating label.
• The EV also check the capacity of the charging cable that you use, and never exceed the capacity of the charging-cable.

If your GLB wallbox is equipped with a socket, it is important to use the right type of cable. For example, to charge at 32A, a 32A cable is required. There are both 1-phase and 3-phase cables on the market, make sure you use correct type for your EV.
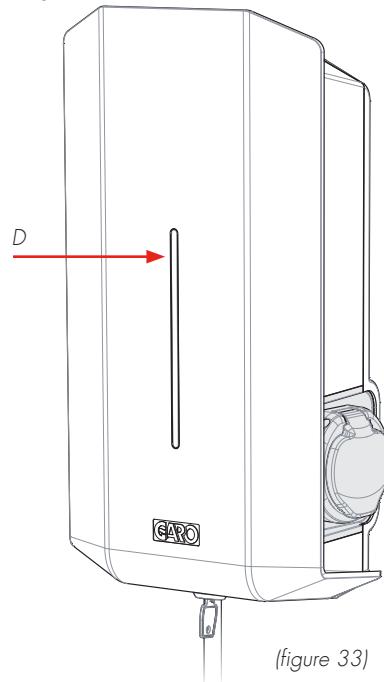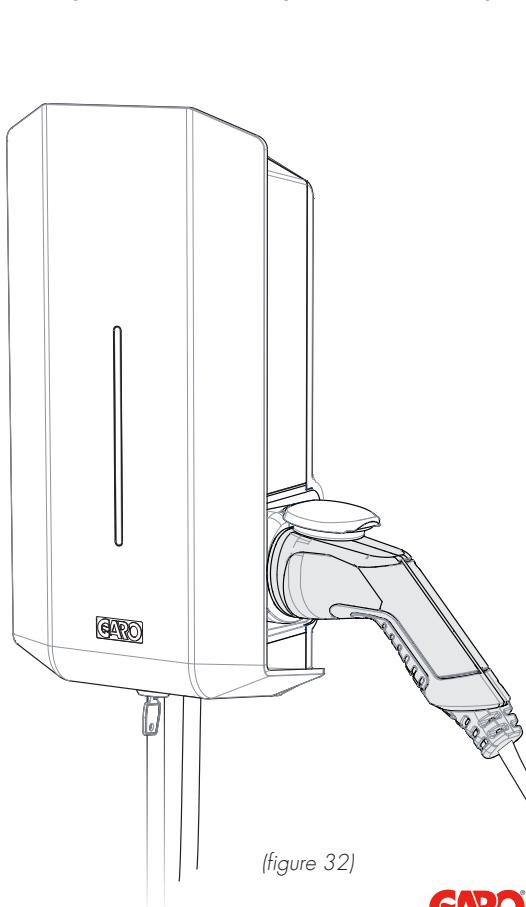
The status of the GLB-Wallbox can be obtained from the color of the Indication light (D).

Solid green light: charger ready, vehicle not connected.

Flashing green light: device connected to vehicle eg. status

Rapid flashing green: device waiting for authorization eg. RFID tag

Shifting blue light intensity: device connected to vehicle, charging in progress

Solid blue light: RFID accepted - waiting to start charging

Red/yellow light: fault. Refer to selection on Troubleshooting

Sound indications:

• Up beat tone: Charger power up or begin charging process.

• Down beat tone: Charger fault.

• Ticking tone: device waiting for authorization eg. RFID tag.
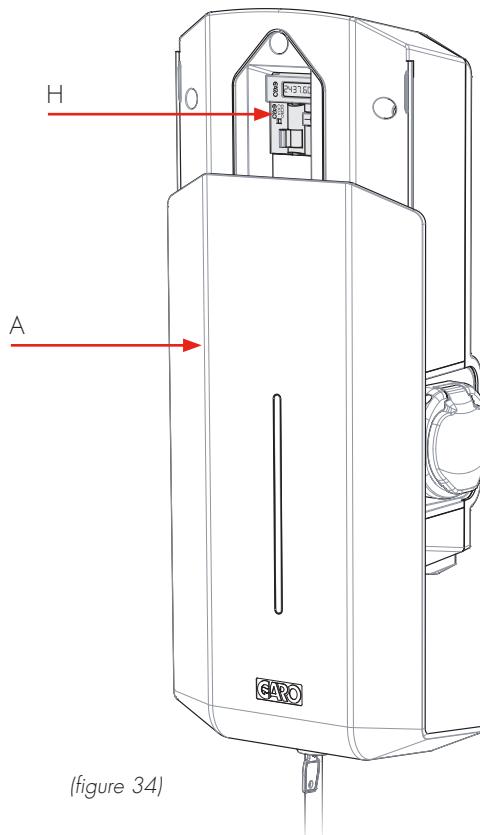
D

(figure 33)

(figure 32)

Resetting/Conditioning of RCCB or RCBO

If the GLB-wallbox is equipped with a RCCB or RCBO (H) (figure 31). In the event of overload/earth fault, these can be tripped. These components must also be conditioned every 6 months.

Procedure for resetting/conditioning:

1. Disconnect the car.
2. Unlock the front cover with the key provided.
3. Open the front cover (A) (figure 31) by sliding it downwards.
4. Reset the circuit breaker. When conditioning press the test button, then reset the circuit breaker.
5. Close the front cover by sliding it upwards.
6. Lock the front cover with the key.

The front cover must always be locked in its upper position in order to ensure compliance with IP Code IP44.
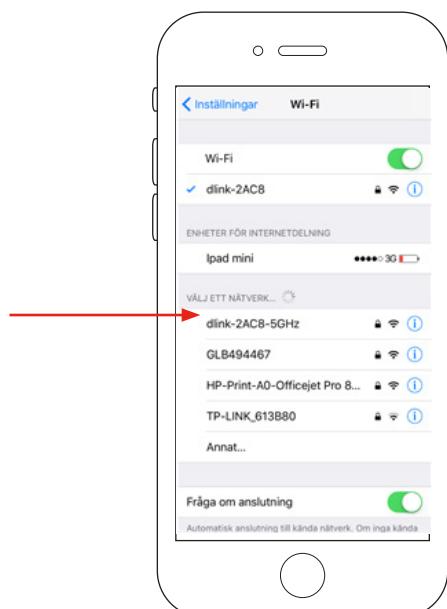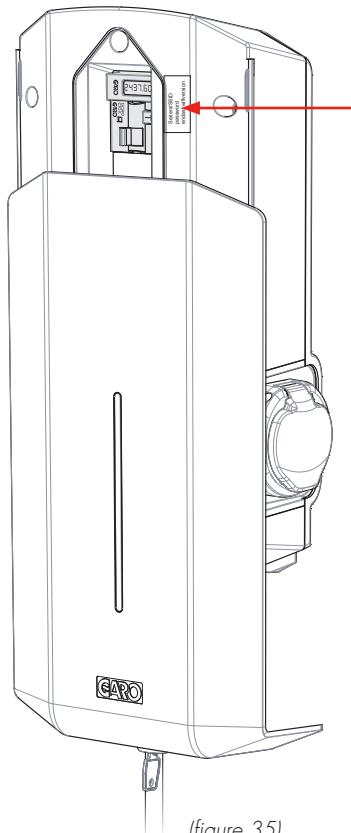

(figure 34)

Connecting to the wallbox's Wi-Fi access point (AP)

NOTE: Only for GLB-Wallboxes with communication card installed

1. Make sure that the GLB Wallbox is turned on.
2. Check the Serial no./SSID and password on the label which can be found both under the sliding cover and inside the wallbox, see (figure 3) (figure 9). If the cover is locked, use the key included. Make a note of the serial number/SSID and password in the box below for future reference.
3. Identify the wallbox's SSID name in the wireless network display on your phone, tablet or computer. Connect to the wallbox's wireless network and enter the password.
4. Launch the web-browser on your device. The device will display the wallbox's website automatically or type in 172.24.1.1 in your web-browser.

To connect the GLB Wallbox to a wireless network, see the section entitled Connect GLB Wallbox to a local network via Wi-Fi.

(figure 36)

(figure 35)

Web interface

In the GLB-Wallbox's web interface, you can access several features. Below are some examples. (Due to continuous development, there might be more features in the web-interface than listed below and the pictures can vary)

Warning!
GARO recommend that settings only are made by a person with enough knowledge of this product. Wrong settings can cause disturbances or overload of your electrical installation.
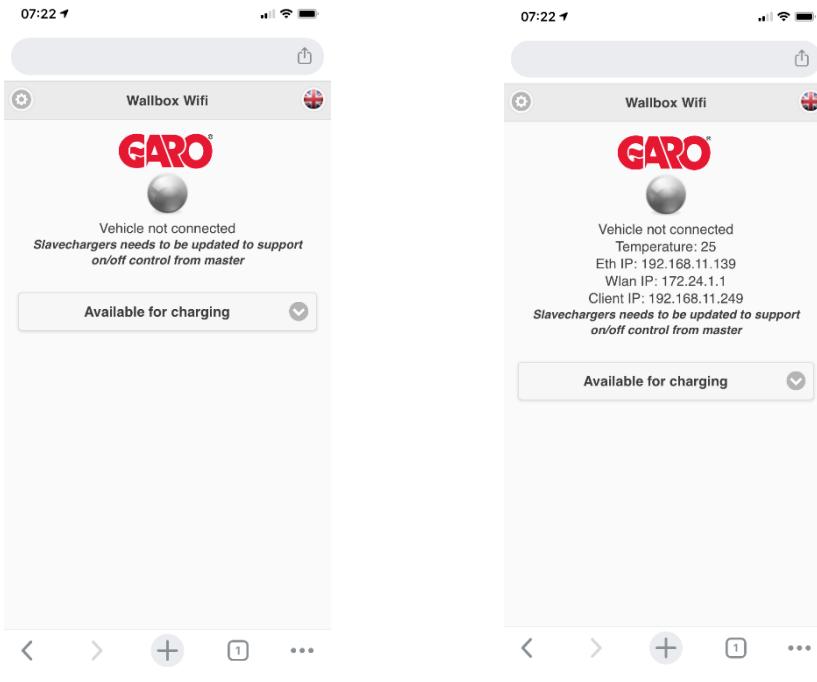
Note:
When the GLB wallbox is connected to your local network, you should use the address chargebox. garo.se in the web browser. Your mobile/tablet/PC must be connected to same network as your GLB Wallbox.

- DLM settings (Dynamic Load Management and require external energy meter installed)
- Scheduled Limited Charge Current settings (not active when external energy meter installed)
- Naming functions for GLB Wallbox and RFID tags
- Activating and deactivate RFID function
- Activating and deleting RFID tags
- Connecting to local Wifi or LAN settings
- G-Cloud information and settings (only for G-Cloud systems)
- Energy consumption (only master GLB, require installed energy meter)
- Updating of the GLB-Wallbox firmware
- Schedule functions
- Activate/deactivate GLB-Wallbox

Main menu

Doubleclick on the GARO symbol and extended information shows

Dynamic Load Management (DLM) settings in the web interface (1pcs installed DLM energymeter)

All load balancing settings in groups are carried out via the GLB-Wallbox's web interface.

The DLM meter connected – Group configuration' option can be found under Settings.

The Fuse rating contract can be set (A), as can the value of the power rating contract (kW), where relevant.

Group loadbalancing

LB Meter 100

Currentlimited (A)

16 — A

☑ **Powerlimited (kW)** — B

This wallbox

782630   L1-N...   Load... — C

Connected wallboxes

527881   3-Ph...   Not l...

579136   L1-N...   Load...

787053   L1-N...   Load...

Scan again — D

Save — E

A. Select current or power limitation.

B. Set maximum current (A) or power (kW).

C. In the case of a single-phase charger, if the charger is to be controlled by load balancing, the phase assignation must be set. Three-phase chargers do not have phase assignation.

D. Search for other connected GLB-Wallboxes. These are shown in the list through their respective serial numbers.

E. Always save settings!

(figure 37)

Dynamic Load Management (DLM) settings in the web interface (2pcs installed DLM energymeter)

A. Select current or power limitation.

B. Set maximum current (A) or power (kW).

C. In the case of a single-phase charger, if the charger is to be controlled by load balancing, the phase assignation must be set. Three-phase chargers do not have phase assignation.

D. Search for other connected GLB-Wallboxes. These are shown in the list through their respective serial numbers.

E. Always save settings!

(figure 38)

RFID settings in the web interface

Settings

Model: GLBDCM-T222WO
Software version: 6.3-136 - **Check for updates**
Chargebox in Master mode **Connected chargeboxes**
Serialnumber: 782630
Max current: 16A

| Char... | **RFID** | WIFI | Ether... | G-Cl... |

G-Cloud service activated. RFID Administration available **online**
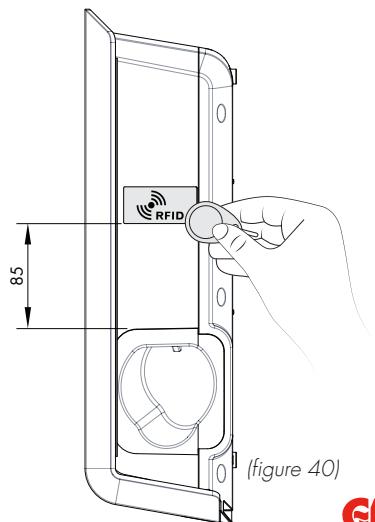
☑ Activate RFID check

Registered RFID tags

1234567890 / All wallboxes	⊖
1904024734 / All wallboxes	⊖
3824024800 / All wallboxes	⊖
1 → Add new tag	⊕

2 → **Save**

(figure 39)

85

(figure 40)

Activating and deleting RFID tags
When RFID is activated, you can choose 'Add new tag". You can now manually register the tag number in the 'RFID Number' field.

2. Click 'Save'.

Note: when a group of GLB-Wall boxes are connected, you can specify RFID-tag for an individual GLB-Wallbox.

Alternatively, you can read the tag number by selecting "Read tag from wallbox".
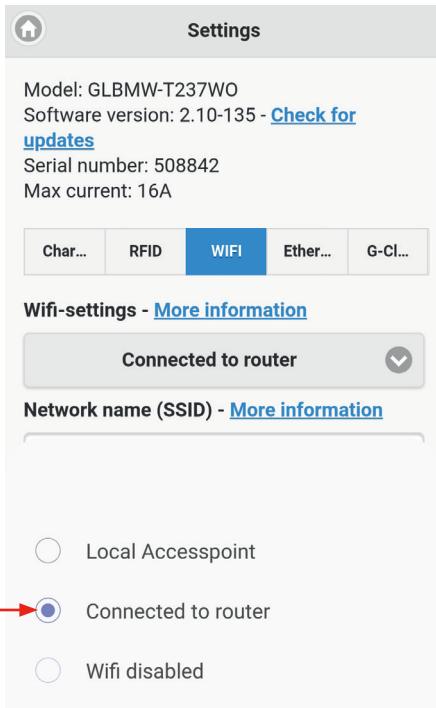
To read an RFID tag, hold it towards the RFID reader, (figure 44). The RFID tag number is automatically displayed in the 'RFID number' field. Then click 'Save'.

The 'Reference' box is a free text field to be used for entering the name of the person using the tag, for example.
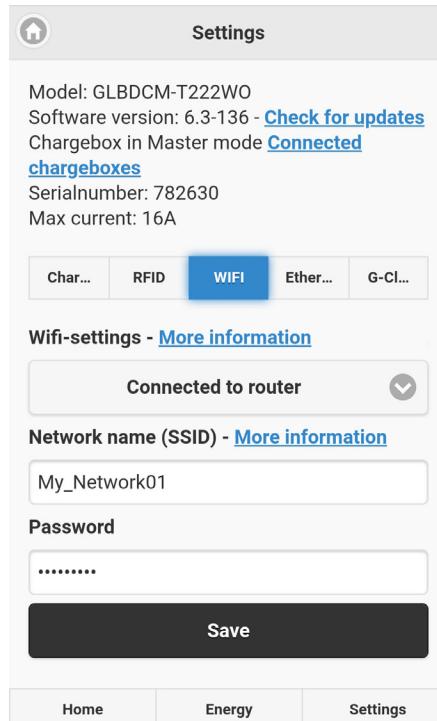
When RFID is activated, a registered RFID tag must be held out in order to activate the GLB-Wallbox after the vehicle has been connected. When the RFID reader is attempting to read an RFID tag, a ticking sound is emitted and the green light flashes quickly. The user has 30 seconds to read the RFID tag after having connected the vehicle. A rising three tone signal is emitted when the tag has been read. If the tag is authorized, the GLB-Wallbox will be activated. If the tag is unauthorized (not registered), a longer, block tone will be emitted and a red light indicated.
To delete a registered RFID tag, click on the minus symbol to the right of the tag number and confirm that you wish to delete the tag

GARO®

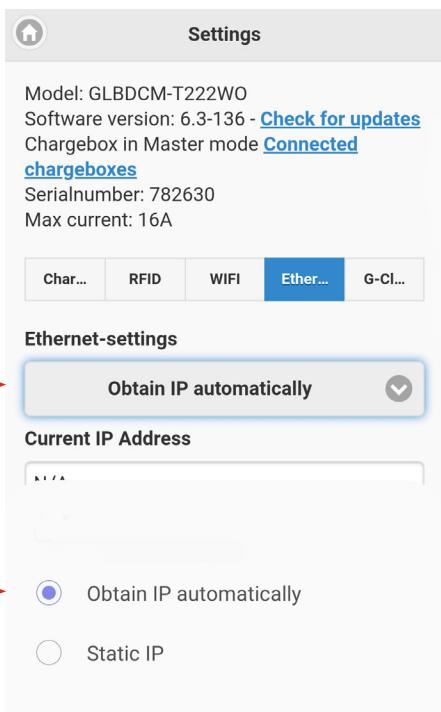# Connect GLB-Wallbox to a local network via Wi-Fi

(figure 41)

(figure 42)

A.   Choose to connect via router.

B.   Enter your network name/SSID.

C.   Enter your network password

D.   Press save.

NOTE! When the GLB Wallbox is connected to a local network,

use the adress chargebox.garo.se in your web browser

and follow the instructions

Connect GLB-Wallbox to a local network via ethernet using DHCP-server

Laddboxen kommer att försöka få en IP address från DHCP-servern på det anslutna nätverket. Om kommunikationen av någon anledning bryts kommer laddboxen att återgå till status "Accesspunkt" efter 10 minuter.

(figure 43)   *(figure 44)*

A.   Choose to obtain IP-address automatically in the Ethernet-settings.

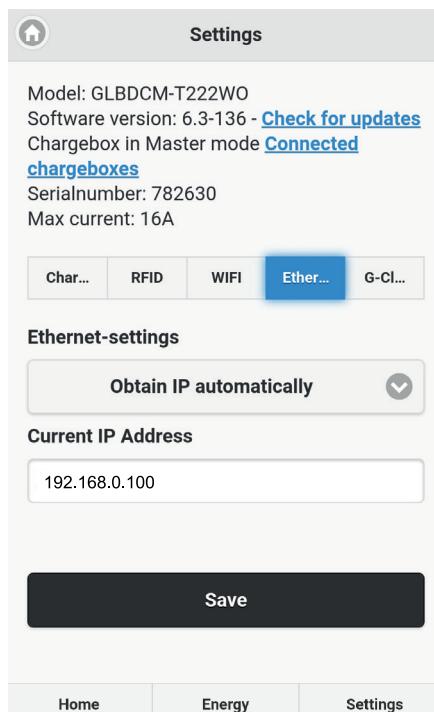B.   Current IP-address is shown

C.   Press save

         NOTE! When the GLB Wallbox is connected to a local network, use the adress chargebox.garo.se in your web browser and follow the instructions.

Connect GLB-Wallbox to a local network via ethernet using static IP-address

The GLB-Wallbox will attempt to connect to the local network using a static IP-address. If the data entered is incorrect or the connection is unsuccessful for any other reason, the device will return to access point mode after around 10 minutes.

(figure 45)

(figure 46)

A.   Choose Static IP.

B.   Enter IP-address.

C.   Enter Netmask.

D.   Enter Gateway.

E.   Save.
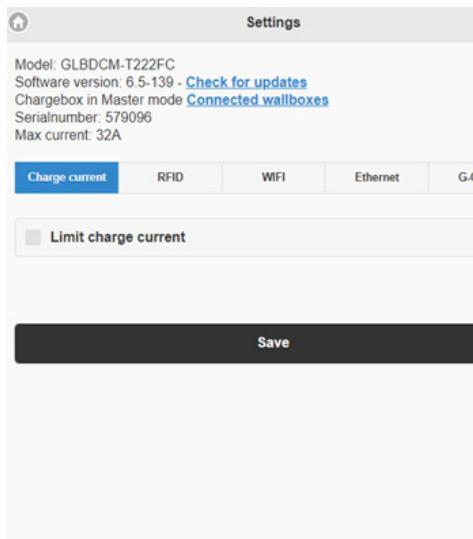   NOTE! When the GLB Wallbox is connected to a local network, use the adress
       chargebox.garo.se in your web browser and follow the instructions.
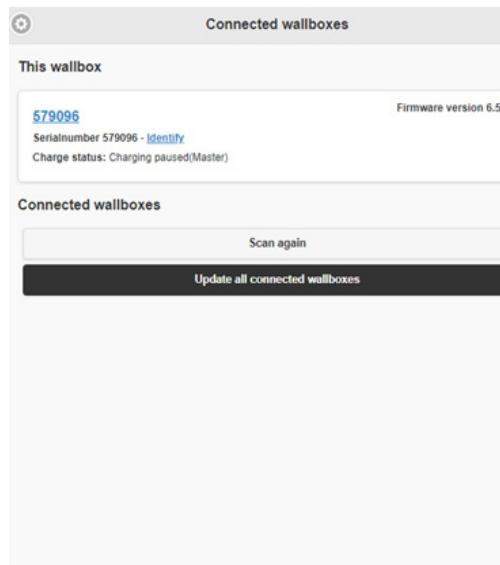
Firmware update process for GLB Wallbox connected to internet via Wifi or LAN

Login to your GLB-wallbox via web-browser and press button "Check for updates" and then follow the instructions.

NOTE! This process require that you have connected your GLB-Wallbox to internet via Wifi or LAN in the settings. When multiple GLB-Wallboxes are connected in a grid, updates can be done at same time from the web interface.

(figure 47)

(figure 48)

Firmware update for GLB Wallbox not connected to internet via Wifi or LAN

By Computer / Android mobile or tablet:
1. Open https://www.webel-online.se/wifi and download the file. (device must be connected to internet)
2. Connect your device to the GLB Wallbox Wifi network. (Search for GLB<the box serial no>)
3. Open http://172.24.1.1:8080/update in your web-browser
4. Press button "choose file" and mark the downloaded file.
5. Klick "Update" and wait for the update process to end.

Care

Do not install or use the GLB Wallbox near flammable, explosive, harsh, or combustible materials, chemicals, or vapors.

Turn off input power at the circuit breaker before installing, configuring or cleaning of the GLB Wallbox.

Never spray water or any other liquid directly at the GLB Wallbox. Never spray any liquid onto the charge handle or submerge the charge handle in liquid. Store the charge handle in the dock to prevent unnecessary exposure to contamination or moisture.

Do not use cleaning solvents to clean any of the GLB Wallbox's components.

The outside of the GLB Wallbox, the charging cable, and the end of the charging cable should be periodically wiped with a clean, dry cloth to remove accumulation of dirt and dust.

Avoid mounting the wall box in direct sunlight. The charging current will be reduced to 16A if the temperature limit inside the wallbox is exceeded. Charging can also be completely turned off should the wallbox be too hot, this is a safety feature to ensure a long life-time of the product.

Cleaning the Charging Station

We recommend cleaning the GLB Wallbox with a soft dry cloth. Never use abrasive pads or detergents.

Troubleshooting

Indication	Type of fault	Measure
Solid red light ●	RCCB has tripped or EV earth check error is detected.	Reset. Refer to section on resetting the residual-current or personal protective current breaker.
Solid red light for 3 sec ●	RFID tag not accepted.	
Red fast flash ((●))	DC current >6mA - charging has stopped.	
Constant yellow light ●	Broken cable.	Check cable
Flashing yellow light (●)	Motor lock socket not in latched position.	Contact a qualified electrician.
Shifting red/green/ yellow ● ● ●	DC detection hardware error.	
Solid purple light (●)	Chargebox overheating, charging has stopped.	
White fast flash ((○))	Search light indication.	

Indication	Type of fault	Measure
One quick white flash repeating every minute ○ ○ ○	Indicate an error in DLM function.	
Solid blue light ●	RFID accepted - waiting to start charging.	
Shifting blue intensity ● ● ●	EV charging in progress.	
Shifting red/blue ● ● ●	Software upgrade in progress.	
Shifting blue/black ● ●	Chargesession not enabled due to scheduled mood.	
Solid green ●	Charger in idle, waiting for EV to connect.	
Green slow flash (●)	EV connected, wait to start charging or EV has finish charging.	
Green fast flash ((●))	RFID reader is active, waiting to read tag for authorization.	

If the advise does not help, contact your qualified installer.

Technical data

Specifications

Product type:	all GLB models
Standards/directives:	IEC 61851-1 and IEC TS 61439-7

$$C \, \epsilon \; \textbf{RoHS}$$

Installation:	on wall
Rated Voltage:	230V/400 50Hz
Installation method:	Wall mounted
Recommended installation height:	0,5-1,5m above ground
Electrical installation method:	TT-, TN- and IT system
Charging type:	Mode 3
Protection class:	IP44
Mechanical impact resistance:	IK08
Temperature range:	-250°C – +450°C (without direct sunlight)
Storage temperature:	-35⁰C – +55⁰C
Installation height:	0.5–1.5 metres above ground/land to lower edge of charger
Weight:	Around 3 kg including socket outlet 3.8–4.1 kg including cable and connector, 1-phase 5.4 kg including cable and connector, 3-phase
Standard cable length (when included):	Standard 4,5m (Only GLB models with fixed cables)

CE

IP44

230-400V